PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Claire MARTIN, et al.

Docket No: Q57933

Appln. No.: 09/513,169

Group Art Unit: 2666

Confirmation No.: 7864

Examiner: Melanie JAGANNATHAN

Filed: February 25, 2000

For: METHOD TO PERFORM CENTRAL CONTROL, A LINE TERMINATOR AND AN ELEMENT CONTROLLER REALIZING SUCH A METHOD AND A TREE-LIKE NETWORK INCLUDING SUCH A LINE TERMINATOR AND AN ELEMENT CONTROLLER

SUBMISSION OF APPEAL BRIEF

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief. A check for the statutory fee of $500.00 is attached. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

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23373
CUSTOMER NUMBER

Date: December 20, 2005

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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I. REAL PARTY IN INTEREST

The real party in interest is ALCATEL, by virtue of an assignment executed by Claire MARTIN, Hans SLABBINCK, Ingrid Zulma Benoit VAN DE VOORDE, and Peter Johannes VETTER (hereinafter "Appellant") on February 11, 2000, and recorded by the Assignment Branch of the U.S. Patent and Trademark Office on February 25, 2000, at Reel 010637, Frame 0513.

II. RELATED APPEALS AND INTERFERENCES

To the knowledge and belief of Appellant, the Assignee, and the undersigned, there are no other appeals or interferences before the Board of Appeals and Interferences that will directly affect or be affected by the Board's decision in the instant Appeal.

III. STATUS OF CLAIMS

Claims 1-18 are all the claims pending in the application.

Claims 1-6 and 9-18 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,411,410 to Wright et al. (hereinafter "Wright") and claims 7 and 8 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Wright in view of U.S. Patent No. 6,229,634 to Smith et al. (hereinafter "Smith").

IV. STATUS OF AMENDMENTS

With the filing of this Brief, all Amendments have been entered and considered by the Examiner.

The Application was originally filed with claims 1-9. Appellant filed a Preliminary Amendment concurrently with the application on February 25, 2000, in which claims 3 and 9 were amended.

In response to the Non-Final Office Action mailed August 6, 2004, Appellant filed an Amendment under 37 C.F.R. § 1.111 in which claims 1-9 were amended and claims 10-18 were added.

In response to the Final Office Action mailed April 29, 2005, Appellant filed a Response under 37 C.F.R. § 1.116. In this Response, no amendments were made.

The Advisory Action dated August 9, 2005 indicates that the amendments are not entered. However, in the Response under 37 C.F.R. § 1.116, no amendments were made.

Appellant filed a Notice of Appeal to appeal the final rejections of claims 1-18 on September 29, 2005.

The Appendix included with this Brief, sets forth the claims involved in the appeal and reflects the claim changes made in the above-identified Amendments.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Appellant's application relates to a method of performing central control of an in-line element, to a line terminator, and to an element controller realizing such a method and to a tree-like network, which includes such a line terminator and an element controller. The tree-like network includes upstream cascade connection of the dedicated branches, a combiner arrangement, and a common branch, whereby a number of network terminators are coupled to a line terminator (page 1, lines 10 to 17 of the specification). The line terminator distributes a grant signal, which is a permission given to various network terminators to transmit upstream. According to an identification included in the grant, the identified network terminator transmits an upstream burst called an upstream information signal (page 1, lines 18 to 21 and lines 29 to 32 of the specification).

This tree-like network demands in-line elements such as optical switches and optical amplifiers in the dedicated branches in order to support the required optical power-budget and facilitate transmission of signals from the network terminators to the line terminator and vise versa. These elements are included along the downstream transmission path of the downstream information signals distributed by the line terminator to the network terminators and along the upstream transmission path of the upstream information signals being transmitted by one of the network terminators. These in-line elements must perform predefined functions at predefined time moments. Another in-line element is a burst mode receiver being coupled on the common branch to the line terminator. The burst mode receiver must detect at predefined time moments certain activity of the network terminators and must perform at other predefined time moments

automatic gain control for the different network terminators (page 2, lines 1 to 22 of the specification).

In the conventional techniques, there is insufficient central control of these in-line elements or the control requires a significant amount of overhead (page 2, line 23 to page 3, line 7 of the specification). In the Appellant's application, however, the central control is performed efficiently without extra control signals (page 3, lines 8 to 11 of the specification). In the Appellant's application, the grant message includes a first group of bits that identifies the selected element from the in-line elements and a second group of bits that identifies a locally predefined function (page 3, lines 17 to 21 of the specification). The second group of bits has a local significance, where it may have different values for different in-line elements (page 4, lines 5 to 13 of the specification). The second group of bits determine the type of function that must be executed by the in-line element (page 7, line 23 to page 8, line 2).

As explained above, the tree-like network includes an optical terminator (OLT) coupled to the network terminators (NT1, NT2, ..., NTn) via the common branch and dedicated branches (Fig.; page 6, lines 24 to 28). The common branch and the dedicated branches include in-line elements such as a feeder/repeater (FR) and a burst mode receiver (BMRX) and each one of the dedicated branches also includes some in-line elements *e.g.*, Ei included in the upstream branch from the network terminator NTi (Fig.; page 6, line 29 to page 7, line 3).

The OLT includes determining means, which is a determiner (DET) that is coupled to the including means, which is an includer (INCL), which in turn is coupled to the forwarding means, which is a forwarder (FORW). The FORW is coupled to the BMRX. The FORW includes an encapsulation means, which is an encapsulator (ENC). The ENC is coupled to the INCL and to

the transmitter (TRX). The TRX is coupled to an output of the OLT. This output of the OLT is coupled to the downstream transmission link of the common branch (Fig; page 7, lines 14 to 22).

The OLT performs a central control of the network terminators NT1, NT2, ..., NTn but also of the in-line elements *e.g.* the in-line element Ei, the feeder repeater FR, and the burst mode receiver BMRX. That is, the OLT determines a first plurality of bits A according to an identification of the selected element SEL-E and determines a second plurality of bits B according to an identification of the locally predefined function SEL-F using the DET. The OLT then sends a grant message G, in which it includes a first plurality of bits A and a second plurality of bits B. In this way, a selected in-line element SEL-E must execute a particular locally predefined function SEL-F (Fig.; page 7, line 23 to page 8, line 2 of the specification). The bits are included into the grant message by the INCL, which in turn provides the message G to the FORW. The grant message G is, in turn, encapsulated by the ENC in a downstream signal D(G)) and is forwarded to the TRX, which distributed the D(G) downstream towards the different network terminators NT1, NT2, ..., NTi, ..., NTn (Fig.; page 8, line 24 to page 9, line 8 of the specification).

The in-line element Ei includes or is coupled to an element controller (CTRL-E). The CTRL-E includes recognizing means, which is a recognizer (RECO). The RECO is downstream coupled to an input of the element controller CTRLE-E *i.e.* coupled to the optical tap. The RECO may also be coupled to the different in-line elements. The element controller CTRL-E controls its respective in-line element or may control different in-line elements, which may be included in the amplifier/splitter AS. The RECO interprets the grant message G. In the event when in the first plurality of bits A an identification of an in-line element or an identification of a

branch identifier is included upon which one of in-line elements needs to react, the RECO creates a control signal CTRL(Ei(SEL-F)) and forwards this control signal CTRL(Ei(SEL-F)) to the related in-line element *i.e.*, the selected in-line element Ei. The control signal CTRL(Ei(SEL-F)) furthermore includes the identification of the locally predefined function SEL-F according to the interpretation of the second plurality of bits B. In this way the selected function SEL-F is imposed by the CTRL-E upon the in-line element Ei by the control signal CTRL(Ei(SEL-F)) under the impulse of the central control of the electrical line terminator ELT (Fig.; page 10, lines 8 to 28 of the specification).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

There are two issues on appeal. The first issue on appeal is whether the Examiner improperly finally rejected claims 1-6 and 9-18 under 35 U.S.C. § 102(e) as being allegedly anticipated by U.S. Patent No. 6,411,410 to Wright et al. (hereinafter "Wright"). The second issue on appeal is whether the Examiner improperly finally rejected claims 7 and 8 under 35 U.S.C. § 103(a) as being obvious over Wright in view of U.S. Patent No. 6,229,634 to Smith et al. (hereinafter "Smith").

VII. ARGUMENT

Appellant respectfully requests the Board to reverse the Examiner's final rejections of the claims pending in the application for at least the following reasons.

Issue 1:

Claims 1-6 and 9-18 are novel and are not anticipated by Wright under 35 U.S.C. § 102(e). This Appeal Brief, at least initially, focuses on claim 1.

A. Exemplary Features of Claim 1

Claim 1, among a number of unique features, requires:

> determining by said line terminator a first plurality of bits according to an identification of a selected element and a second plurality of bits according to an identification of a locally predefined function, said selected element being selected out of a set of in-line elements comprising at least said in-line element in order to execute said locally predefined function...
>
> ...at least one network terminator of said plurality of network terminators, is coupled via said in-line element to said line terminator by a dedicated branch and a common branch, respectively.

Appellant respectfully submits that the unique combination of claim 1 including at least the claimed first plurality of bits according to identification of a selected element and a second plurality of bits according to an identification of a locally predefined function included in the grant signal where a network terminator is coupled to the line terminator via an in-line element is absent from Wright.

As explained above in the Summary of the Claimed Subject Matter, a tree-like optical network has a line terminator and a number of network terminators coupled to each other via a

common and dedicated branches. A grant signal is distributed by the line terminator to different network terminators for upstream information signal. That is, the line terminator provides a permission signal that permits a particular network terminator to transmit data upstream at a particular point in time. To support the required power-budget of the optical networks, the dedicated branches include an in-line elements such as optical amplifiers and optical switches. These in-line elements are included along the transmission path between the line terminator and the network terminators. To control these in-line elements, the grant signal sent to the network terminators also includes a first plurality of bits and a second plurality of bits. The first plurality of bits identifies the in-line element being controlled and the second plurality of bits specifies a locally predefined function that the identified in-line element should perform.

B. Legal Standard

To be an "anticipation" rejection under 35 U.S.C. § 102, the reference must teach every element and recitation of the Appellant's claims. Rejections under 35 U.S.C. § 102 are proper only when the claimed subject matter is identically disclosed or described in the prior art. Thus, the reference must clearly and unequivocally disclose every element and recitation of the claimed invention. MPEP § 2131.

C. Prior Art

Wright relates to a wavelength-division multiplexing in passive optical networks. Wright discloses an optical line termination (OLT) device (12), which generates a plurality of optical signals having different respective wavelengths. Each optical signal carries data. In Wright, a plurality of optical network units (ONUs) are connected to the OLT device (12) by way of a passive optical network (6) so as to receive the wavelength-division-multiplexed optical signals.

Each ONU (14) has a wavelength selection unit (tunable filter 42) operable in dependence upon control information sent from the OLT (12) to the ONU (14). The control information may be included in the data-carrying optical signals themselves as overhead information, or may be sent separately by another optical signal that is wavelength-division multiplexed with the data-carrying optical signals. Accordingly, in Wright, the downstream capacity of the passive optical network can be flexibly shared by the different optical receivers. (*See* Abstract and col. 2, lines 4 to 36).

In particular, Wright discloses an ONU 14 having a tunable filter 42 or 410 selecting the optical signal and passing it to the optical receiver 44 or 420 that processes the selected optical signal (Figs. 7 and 19; col. 9, line 53 to col. 10, line 2, col. 15, line 59 to col. 16, line 8). Any overhead information is passed by the optical receiver 44 to the WCEU 46, which processes it and applies control information to the tunable filter 42 or 410 (col. 10, lines 4 to 22; col. 16, lines 1 to 8).

D. Examiner's Position

The Examiner alleges that the OLT of Wright determines the control information that identifies the optical network unit (ONU), (alleged first plurality of bits), and identifies the timeslots and wavelength information, (alleged second plurality of bits). The Examiner further alleges that Wright discloses the network having OLT and a number of ONUs (alleged network terminators) and that each ONU has a tunable filter (alleged in-line element).

In short, the Examiner alleges that Wright's OLT 12 connected to ONUs having a tunable filter meet the unique features of claim 1. The Examiner further alleges that the first plurality of bits and the second plurality of bits as set forth in claim 1 are equivalent to the control

information identifying the ONUs and time slots, respectively (*see* Continuation Sheet of the Advisory Action mailed August 9, 2005 and pages 2-3 of the Final Office Action mailed April 29, 2005).

E. Appellant's Position

Appellant respectfully submits that Wright fails to unequivocally disclose the unique features set forth in claim 1. It is Appellant's position that Wright fails to disclose: a) in-line elements as set forth in claim 1; b) the first plurality of bits that would identify the in-line element; and c) the second plurality of bits that would identify a locally predefined function.

In Wright, there are no in-line elements as set forth in claim 1. The tunable filter (alleged in-line element) is located in the optical network unit, alleges network terminator, (*see e.g.* Figs. 7, 15, 16, and 19; col. 15, lines 59 to 61) and is not on the line *i.e.*, branches of the network, within the meaning of claim 1. In other words, the tunable filter does not couple the line terminator to a network unit as it is positioned within the network unit.

Moreover, Wright fails to disclose the first plurality of bits identifying a selected element, which is an in-line element. Wright discloses sending control information "needed by the ONU" to select a new optical signal (col. 3, lines 32 to 46). That is, the control signal of Wright has a field specifying at least one optical receiver that is to select the corresponding optical signal. The fields then implicitly identify the optical signal to be selected by an optical receiver (col. 3, lines 31 to 46). In other words, in Wright, the control information included in the data packet provides information identifying a receiver and a respective wavelength. In Wright, the control information does not identify the tunable filter 42 (alleged in-line element) but rather the ONU to which it is addressed (col. 10, lines 60 to 67: "if it [WCEU] finds, in OH field, its own ONU

designation number it determines that its ONU must tune in the relevant time slot to the optical signal whose wavelength corresponds to that field"). Claim 1 recites: "the first plurality of bits according to an identification of selected element...selected out of a set of in-line elements" and not selected out of the network terminators. Wright only discloses the control information identifying the ONU (alleged network terminator). In short, Wright does not disclose the first plurality of bits identifying the in-line element.

In addition, in Wright, the control information further includes the relevant time slot and the wavelength that the designated ONU should tune into (col. 10, lines 61 to 67). That is, Wright discloses the control information identifying the relevant time slot and wavelength (alleged second plurality of bits) for the ONU. Wright, however, does not disclose the relevant time slot and wavelength being locally predefined. Since Wright only discloses having the control information identify a timeslot and a wavelength, the rejection is improper as it lacks "sufficient specificity" required under 102. "[A]nticipation under § 102 can be found only when the reference discloses exactly what is claimed and that where there are differences between the reference disclosure and the claim, the rejection must be based on § 103 which takes differences into account." *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985); MPEP § 2131.

F. Concluding Remarks

Therefore, "determining by said line terminator a first plurality of bits according to an identification of a selected element and a second plurality of bits according to an identification of a locally predefined function, said selected element being selected out of a set of in-line elements comprising at least said in-line element in order to execute said locally predefined function...at

least one network terminator of said plurality of network terminators, is coupled via said in-line element to said line terminator by a dedicated branch and a common branch, respectively," as set forth in claim 1 is not disclosed by Wright. Wright fails to disclose having the tunable filter positioned in line between the line terminator and the network units so at to couple the two (the tunable filter is part of the ONU), having the control information include bits identifying the tunable filter (the control information identifies the ONU, alleged network terminator), and having the control information include bits identifying a locally predefined function for the tunable filter to execute (the control information only identifies the wavelength and the time slot for the ONU).

For at least these exemplary reasons, Appellant respectfully submits that claim 1 is patentably distinguishable from Wright. Accordingly, Appellant respectfully requests the Board to withdraw this rejection of claim 1.

G. Other Claims

Dependent claims 2, 3, and 10-18 are patentable at least by virtue of their dependency on claim 1.

Moreover, claim 10 recites: "wherein said plurality of in-line elements are position on said common link and said dedicated branch between said line terminator and the plurality of network terminals". As explained above, Wright only teaches a tunable filter within the optical network unit and fails to teach or suggest having the in-line elements between the line terminal and the network terminals. For at least this additional exemplary reason, claim 10 is patentably distinguishable (and is patentable over) Wright.

Similarly, claim 11 recites: "said plurality of in-line elements facilitate transmission of signals from said network terminators to the line terminator and vise versa." Wright's tunable filter, on the other hand, is a filter that selects a signal from the plurality of received signals. In other words, Wright does not teach or suggest having the tunable filter facilitate transmission of the signals.

The Examiner alleges that since the filter of Wright turns to a predetermined wavelength at a predetermined time period, it facilitates the transmission of signals (*see* Continuation Sheet of the Advisory Action mailed August 9, 2005). Appellant respectfully submits that the filter of Wright does not facilitate the transmission of the signal in both directions from and to the line terminator.

For at least these additional exemplary reasons, claim 11 is patentably distinguishable (and is patentable over) Wright.

Claim 12 recites: "each of said plurality of in-line elements facilitate transmission of a signal in a portion of a link from said common link and said dedicated link, where said in-line element is located." As explained in greater detail above, Wright only discloses a tunable filter positioned within the optical network unit for selecting a signal for reception. Clearly, this tunable filter does not facilitate transmission. Moreover, since Wright's tunable filter is not located on a link, it does not facilitate the transmission in a portion of a link where it is located. For at least this additional exemplary reason, claim 12 is patentably distinguishable (and is patentable over) Wright.

Claim 14 recites: "said second plurality of bits determines a type of operation for said selected element to perform" and claims 16 recites: "said second plurality of bits identify a

different function depending on said selected element." The control information, as disclosed by Wright, only identifies the optical network unit and the wavelength on which the signal should be received. Wright fails to teach or suggest having a second plurality of bits identify type of operation or function for the tunable filter to perform at least because the tunable filter always performs the same type of operation *i.e.*, selecting a signal from a number of signals based on a predetermined wavelength and timeslot. In short, tunable filter of Wright always performs the operation of selecting a signal from a number of incoming signals. Wright fails to teach or suggest having the tunable filter perform other operations. Accordingly, Wright does not disclose or suggest the control information including a type of operation to perform. Moreover, Wright does not disclose or suggest the control information identifying different functions depending on which tunable filter is selected. That is, there is no disclosure in Wright that the second group of bits has a local significance.

For at least these additional exemplary reasons, claims 14 and 16 are patentably distinguishable (and are patentable over) Wright.

Claim 17 recites: "said first plurality of bits is a branch identifier identifying at least a portion of the common link and the dedicated link." Wright only discloses that the control information identifies an optical network unit and fails to teach or suggest the control information identifying a portion of the link or a branch. For at least this additional exemplary reason, claim 17 is patentably distinguishable (and is patentable over) Wright.

Independent claims 4, 6, and 9 recite features similar to the features argued above with respect to claim 1, namely, determining a first plurality of bits according to an identification of a selected element and a second plurality of bits according to an identification of a locally

predefined function, said selected element being selected out of said plurality of in-line elements to execute said locally predefined function and where said tree-like network includes a plurality of network terminators being coupled via said plurality of in-line elements to said line terminator by dedicated branches and a common branch, respectively. Therefore, arguments submitted with respect to claim 1 are respectfully submitted to apply with equal force herein. For at least substantially analogous reasons, therefore, Appellant respectfully submits that claims 4, 6, and 9 are patentably distinguishable from (and are patentable over) Wright. In addition claim 5 is patentable at least by virtue of its dependency on claim 4.

Accordingly, Appellant respectfully requests the Board to reverse this rejection of claims 1-6 and 9-18.

Issue 2:

Claims 7 and 8 are non-obvious and patentable over the combined Wright and Smith. Appellant respectfully requests the Board to reverse the 35 U.S.C. § 103(a) rejection of claims 7 and 8 as being unpatentable over Wright and Smith.

Claims 7 and 8 depend on claim 6. Appellant has already demonstrated that Wright does not meet all the requirements of independent claim 6. Smith is relied upon only for its teaching of an amplifier and a burst mode receiver in an optical network. As such, Smith clearly fails to cure the deficient teaching of Wright. Smith does not compensate for the above-identified deficiencies of Wright. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill in the art to have achieved the subject matter of claim 6. Since claims 7 and 8 depend on claim 6, they are patentable at least by virtue of their dependency.

Moreover, the Examiner alleges that it would have been obvious to combine Wright and Smith to process incoming data bursts (*see* page 8 of the Final Office Action mailed April 29, 2005). Claim 7, however, recites that a selected element is an amplifier. Wright teaches a tunable filter for selecting a signal. Replacing a tunable filter with an amplifier (as required in claim 7) or a burst receiver (as required in claim 8), as allegedly disclosed by Smith, would result in an unworkable combination, as the device of Wright would have been incapable to select a signal out of the plurality of the received signals. MPEP § 2143.01.V states: "[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). For at least this additional reason, therefore, claims 7 and 8 are patentable over the combined teachings of Wright and Smith.

Accordingly, Appellant respectfully requests the Board to reverse this rejection of claims 7 and 8.

VIII. CONCLUSION

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: December 20, 2005

Attorney Docket No.: Q57933

CLAIMS APPENDIX

CLAIMS 1-18 ON APPEAL:

1. A method to perform central control of an in-line element in a tree-like network by a line terminator included in said network together with a plurality of network terminators said method comprising:

determining by said line terminator a first plurality of bits according to an identification of a selected element and a second plurality of bits according to an identification of a locally predefined function, said selected element being selected out of a set of in-line elements comprising at least said in-line element in order to execute said locally predefined function;

including by said line terminator in a grant message said first plurality of bits and said second plurality of bits; and

forwarding said grant message by said line terminator to said element forcing execution of said locally predefined function according to said second plurality of bits upon said selected element according to said first plurality of bits,

wherein at least one network terminator of said plurality of network terminators is coupled via said in-line element to said line terminator by a dedicated branch and a common branch, respectively.

2. The method to perform central control of an in-line element according to claim 1, wherein said determining comprises in said first plurality of bits any one of a network terminator identifier and a branch identifier, said network terminator identifier identifying one of said

plurality of network terminators and said branch identifier identifying at least part of said tree-like network.

3. A method to perform central control of an in-line element according to claim 1, wherein said forwarding comprises:

encapsulating said grant message in a downstream signal; and

downstream distributing said downstream signal to said plurality of network terminators by said line terminator;

capturing said grant message out of said downstream signal; and

forwarding said captured grant message to at least one element controller associated with said element forcing execution of said locally predefined function according to said second plurality of bits upon said selected element according to said first plurality of bits.

4. A line terminator to perform central control of a plurality of in-line elements in a tree-like network, said line terminator comprises:

determining means to determine a first plurality of bits according to an identification of a selected element and a second plurality of bits according to an identification of a locally predefined function, said selected element being selected out of said plurality of in-line elements to execute said locally predefined function;

including means coupled to said determining means to include said first plurality of bits and said second plurality of bits in a grant message; and

forwarding means coupled to said including means to forward said grant message to said selected element forcing execution of said locally predefined function according to said second plurality of bits upon said selected element according to said first plurality of bits (A),

wherein said tree-like network comprises a plurality of network terminators being coupled via said plurality of in-line elements to said line terminator by dedicated branches and a common branch, respectively.

5. The line terminator according to claim 4, wherein said forwarding means includes encapsulating means to encapsulate said grant message in a downstream signal and to distribute said downstream signal to said plurality of network terminators to enable taking in of said grant message out of said downstream signal.

6. An element controller associated to a selected element of a set of in-line elements in a tree-like network, to force execution of a locally predefined function upon said selected element under the central control of a line terminator, said element controller comprises:

recognizing means being coupled to an input of said element controller to receive a grant message transmitted by said line terminator, said grant message including a first plurality of bits being determined by said line terminator according to an identification of said selected element and a second plurality of bits being determined according to an identification of a locally predefined function of said selected element, and said recognizing means also recognizes in said grant message said first plurality of bits and said second plurality of bits and upon said

recognition, generates a control signal for selected element forcing execution of said locally predefined function upon said selected element,

wherein said element controller is coupled in a downstream direction to said line terminator, and said line terminator is being coupled via said set of in-line elements comprising said selected element to a plurality of network terminators by a common branch and dedicated branches, respectively.

7. The element controller according to claim 6, wherein said selected element is a switch-able amplifier for amplifying upstream transmitted signals being transmitted by one of said plurality of network terminators.

8. The element controller according to claim 6, wherein said selected element is a burst mode receiver coupled in said common branch to said line terminator for reception of upstream signals.

9. A tree-like network comprising:

a line terminator;

a common branch;

a plurality of dedicated branch;

a plurality of in-line elements;

a plurality of network terminators being coupled via said plurality of in-line elements to said line terminator by said dedicated branches and said common branch, respectively; and

an element controller associated to a selected element of said plurality in-line elements forcing execution of a locally predefined function upon said selected element under a central control of the line terminator, said element controller comprises:

recognizing means being coupled to an input of said element controller to receive a grant message transmitted by said line terminator, said grant message including a first plurality of bits being determined by said line terminator according to an identification of said selected element and a second plurality of bits being determined according to an identification of a locally predefined function of said selected element, and said recognizing means also recognizes in said grant message said first plurality of bits and said second plurality of bits and upon said recognition, generates a control signal for the selected element forcing execution of said locally predefined function upon said selected element, said element controller is coupled in a downstream direction to said line terminator,

wherein said line terminator comprises:

a determining means to determine the first plurality of bits and the second plurality of bits,

including means coupled to said determining means to include said first plurality of bits and said second plurality of bits in said grant message, and

forwarding means coupled to said including means to forward said grant message to the element controller.

10. The method to perform central control of an in-line element according to claim 1, wherein said plurality of in-line elements are positioned on said common link and said dedicated branch between said line terminator and the plurality of network terminals.

11. The method to perform central control of an in-line element according to claim 10, wherein said plurality of in-line elements facilitate transmission of signals from said network terminators to the line terminator and vise versa.

12. The method to perform central control of an in-line element according to claim 11, wherein each of said plurality of in-line elements facilitate transmission of a signal in a portion of a link from said common link and said dedicated link, where said in-line element is located.

13. The method to perform central control of an in-line element according to claim 1, wherein said second plurality of bits identifying said locally predefined function is identifying an operation that said selected element must execute.

14. The method to perform central control of an in-line element according to claim 1, wherein said second plurality of bits determines a type of operation for said selected element to perform.

15. The method to perform central control of an in-line element according to claim 1, wherein said first plurality of bits identifies a selected element, said selected element being a

single system component, and wherein said second plurality of bits identifies said locally predefined function, said identified locally predefined function is a type of function said single system component is ordered to execute.

16. The method to perform central control of an in-line element according to claim 15, wherein said second plurality of bits identify a different function depending on said selected element.

17. The method according to claim 1, where said first plurality of bits is a branch identifier identifying at least a portion of the common link and the dedicated link.

18. The method according to claim 3, wherein said capturing is performed by said selected element.

EVIDENCE APPENDIX:

NONE.

RELATED PROCEEDINGS APPENDIX

NONE.